

X(4360) $I^G(J^P C) = ?^?(1^{--})$

Seen in radiative return from $e^+ e^-$ collisions at $\sqrt{s} = 9.54\text{--}10.58$ GeV by AUBERT 07S and WANG 07D. See also the review under the $X(3872)$ particle listings. (See the index for the page number.)

X(4360) MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4361± 9±9	1 WANG	07D BELL	10.58 $e^+ e^- \rightarrow \gamma \pi^+ \pi^- \psi(2S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
4355 $^{+9}_{-10}\pm 9$	2 LIU	08H RVUE	10.58 $e^+ e^- \rightarrow \psi(2S) \pi^+ \pi^- \gamma$
4324±24	3 AUBERT	07S BABR	10.58 $e^+ e^- \rightarrow \gamma \pi^+ \pi^- \psi(2S)$

¹ From a two-resonance fit.
² From a combined fit of AUBERT 07S and WANG 07D data with two resonances.
³ From a single-resonance fit. Systematic errors not estimated.

NODE=M181

NODE=M181M

NODE=M181M

NODE=M181M;LINKAGE=WA
 NODE=M181M;LINKAGE=LI
 NODE=M181M;LINKAGE=AU

X(4360) WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
74±15±10	4 WANG	07D BELL	10.58 $e^+ e^- \rightarrow \gamma \pi^+ \pi^- \psi(2S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
103 $^{+17}_{-15}\pm 11$	5 LIU	08H RVUE	10.58 $e^+ e^- \rightarrow \psi(2S) \pi^+ \pi^- \gamma$
172±33	6 AUBERT	07S BABR	10.58 $e^+ e^- \rightarrow \gamma \pi^+ \pi^- \psi(2S)$

⁴ From a two-resonance fit.
⁵ From a combined fit of AUBERT 07S and WANG 07D data with two resonances.
⁶ From a single-resonance fit. Systematic errors not estimated.

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 NODE=M181W;LINKAGE=AU

NODE=M181215;NODE=M181

DESIG=1

DESIG=2;OUR EVAL; \rightarrow UNCHECKED \leftarrow DESIG=3

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NODE=M181G1
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OCCUR=2

OCCUR=2

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 NODE=M181G1;LINKAGE=WA
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NODE=M181225

NODE=M181R01
 NODE=M181R01

NODE=M181R02
 NODE=M181R02

NODE=M181R02;LINKAGE=PA

X(4360) DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 e^+ e^-$	
$\Gamma_2 \psi(2S) \pi^+ \pi^-$	seen
$\Gamma_3 D^0 D^{*-} \pi^+$	

X(4360) $\Gamma(i)\Gamma(e^+e^-)/\Gamma(\text{total})$

$\Gamma(\psi(2S) \pi^+ \pi^-) \times \Gamma(e^+ e^-)/\Gamma_{\text{total}}$	$\Gamma_2 \Gamma_1/\Gamma$
<u>VALUE (eV)</u>	
$11.1^{+1.3}_{-1.2}$	7 LIU
12.3 ± 1.2	8 LIU
10.4 $\pm 1.7\pm 1.5$	9 WANG
11.8 $\pm 1.8\pm 1.4$	10 WANG

⁷ Solution I in a combined fit of AUBERT 07S and WANG 07D data with two resonances.
⁸ Solution II in a combined fit of AUBERT 07S and WANG 07D data with two resonances.
⁹ Solution I of two equivalent solutions in a fit using two interfering resonances.
¹⁰ Solution II of two equivalent solutions in a fit using two interfering resonances.

NODE=M181G1

NODE=M181G1

OCCUR=2

OCCUR=2

NODE=M181G1;LINKAGE=LI
 NODE=M181G1;LINKAGE=LU
 NODE=M181G1;LINKAGE=WA
 NODE=M181G1;LINKAGE=WN

X(4360) BRANCHING RATIOS

$\Gamma(D^0 D^{*-} \pi^+)/\Gamma(\psi(2S) \pi^+ \pi^-)$	Γ_3/Γ_2
<u>VALUE</u>	
<8	90 PAKHLOVA 09 BELL $e^+ e^- \rightarrow X(4360) \rightarrow D^0 D^{*-} \pi^+$

$\Gamma(D^0 D^{*-} \pi^+)/\Gamma_{\text{total}} \times \Gamma(e^+ e^-)/\Gamma_{\text{total}}$	$\Gamma_3/\Gamma \times \Gamma_1/\Gamma$
<u>VALUE</u>	
< 0.72×10^{-6}	90 11 PAKHLOVA 09 BELL $e^+ e^- \rightarrow X(4360) \rightarrow D^0 D^{*-} \pi^+$

¹¹ Using $4355^{+9}_{-10}\pm 9$ MeV for the mass of $X(4360)$.

X(4360) REFERENCES

NODE=M181

PAKHLOVA	09	PR D80 091101	G. Pakhlova <i>et al.</i>	(BELLE Collab.)	REFID=53143
LIU	08H	PR D78 014032	Z.Q. Liu, X.S. Qin, C.Z. Yuan		REFID=52296
AUBERT	07S	PRL 98 212001	B. Aubert <i>et al.</i>	(BABAR Collab.)	REFID=51724
WANG	07D	PRL 99 142002	X.L. Wang <i>et al.</i>	(BELLE Collab.)	REFID=51959
